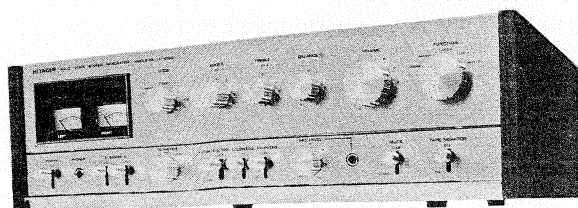




HITACHI HI-FI COMPONENT PRE-MAIN AMPLIFIER

MODEL IA-1000 SERVICE MANUAL



IA-1000

No. 35

1971

1. SPECIFICATIONS

Type: Solid State Stereo Amplifier
Circuit system: Sub-Complementary SEPP constant current
drive system OTL circuitry
Semi-conductor: IC: 2
Transistor: 36
Diode: 18

Music power (IHF): 140W (8 Ω)
Practical output: 55/55W (8 Ω)
Rate of all higher harmonic distortion: 0.5%
Frequency characteristic: 20Hz–80kHz
(only Main Amplifier)

Input sensitivity:
(at an output 1kHz, 40W)

* The numerals in parentheses show input impedances.

PHONO-1 MC 0.25mV (200 Ω)
MM 2mV (50k Ω)
PHONO-2 5mV (50k Ω)
MIC 2mV (35k Ω)
TUNER 140mV (100k Ω)
AUX-1, 2 140mV (100k Ω)
TAPE IN (Pin jack) 140mV (100k Ω)
TAPE IN (DIN) 500mV (100k Ω)

Recording output (at a rating output):

TAPE OUT (Pin jack) 140mV
TAPE OUT (DIN) 40mV

Center channel output: 2.5V (at both channel outputs)

Channel separation:

PHONO-1, 2 More than 50dB
TUNER · AUX More than 50dB

Signal-to-noise ratio (IHF):

PHONO-1 (MC) 60dB, (MM) 65dB

PHONO-2 70dB
TUNER AUX 85dB
Most suitable loading impedance: 4–16 Ω
Damping factor: 50 (8 Ω)
Equalizer characteristic: RIAA $\pm$ 0.5dB
Bass control $\pm$ 12dB (100Hz)
Treble control: $\pm$ 12dB (10kHz)
Loudness control (Volume–30dB): +10dB (50Hz), +4dB (10kHz)
Hi-filter (12dB/oct): –10dB (10kHz)
Low filter (12dB/oct): –8dB (50Hz)
Rating power consumption: 120V/60Hz 120W
(for U.S.A. standard)
120V/60Hz 87W
(for Canada standard)
220V, 50/60Hz 120W
240V, 50/60Hz 120W

Cabinet dimensions: 446 (W) $\times$ 137 (H) $\times$ 330 (D) mm
(17-5/8 $\times$ 5-3/8 $\times$ 13 in)

Weight: 12.6kg (27.8 lbs.)

Accessory devices: VU meter, Microphone mixing
circuitry, Loudness switch, Hi-filter
switch, Low filter switch, Tape moni-
toring switch, DIN connector,
Headphone jack, PHONO input
sensitivity change-over switch, AC
auxiliary power, Speaker change-over
switch, Center channel output
terminal, Pre-amp. output terminal,
Main amp. input terminal.

MODEL IA-1000 SERVICE MANUAL

2. FEATURES

1. Noise has been reduced to the minimum and S/N (Signal-to-Noise) ratio has been further improved by the adoption of Hitachi's high-performance, low-noise type hybrid IC (Integrated Circuits) in the equalizer section.
2. Since the tone control uses the NF type step-system, clear tone effect can be enjoyed.
3. Complementary ITL, OTL circuits of constant current drive system and Hitachi high-performance silicone transistors have realized the lowest distortion and minimum noise.
4. Since an amplifier for the exclusive use of a microphone is built-in, mixing with other program source is possible. Therefore, this model is very convenient for singing songs with background of some records or commenting on record concerts.
5. This amplifier can be used without any input transformer, because the head amplifier for MC (Moving Coil) type cartridge has been installed in the amplifier.
6. It is possible to use this model for various purposes, because the IA-1000 is equipped with a pre-main detachable terminal.
7. Using the center-channel output terminal makes it possible to utilize this model as a center woofer system.
8. An electronic protection circuit is adopted for safety use.
9. The one-touch system of speaker connection terminal makes speaker connection easier.
10. The VU meter built-in is convenient for output and balance ascertainment.

3. FRONT AND REAR PANEL

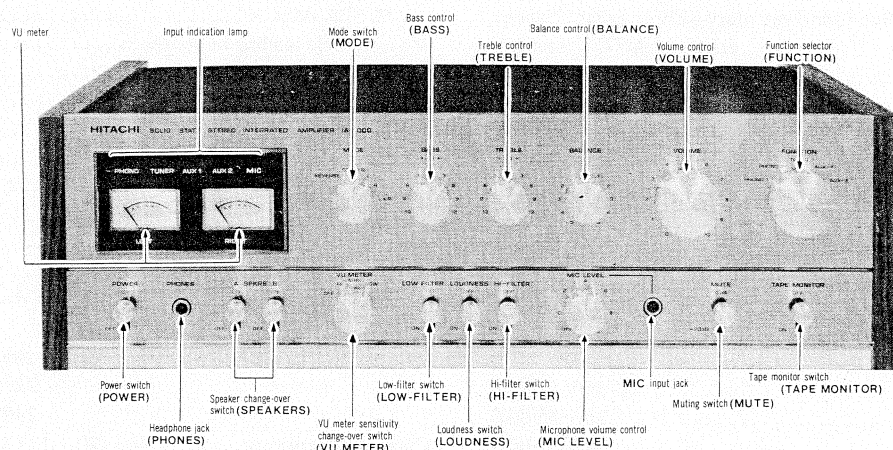


Fig. 1 FRONT PANEL

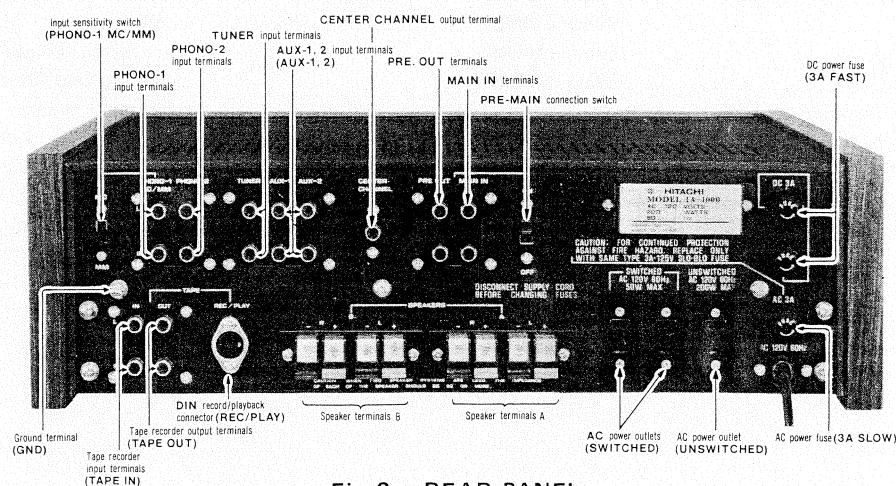


Fig. 2 REAR PANEL

4. SERVICE POINT

4-1 How to inspect the IC circuitry

The hybrid type IC adopted in this model is for an amplification of small signal.

The inside circuitry is, as shown in the circuit diagram on page 13, the same as the 2-stage amplification of an ordinary transistor.

At the time of servicing a set, we can find out damaged IC, as we always do on ordinary transistors, by inspecting each voltage of collector, emitter and base.

The following list shows the standard voltage value of each terminal at the time when IC operates normally.

In case that each terminal voltage value is remarkably different from each standard voltage value, we can consider that the IC has undergone some damage.

In this case, it is recommended to replace it with a new one.

The standard voltage in the following list have been measured by the use of a VTVM (Vacuum Tube Volt Meter) which has higher input impedance. If a tester is used to measure each voltage, values a little lower than these can be obtained.

IC TERMINAL NO. (The same as the seal No. on the Printed Circuit Board)		STANDARD VOLTAGE VALUE
①	1st stage collector voltage	2.4V
② INPUT TERMINAL	1st stage base voltage	0.85V
③	1st stage emitter voltage	0.23V
④ GROUND LEAD TERMINAL		0V
⑤	2nd stage emitter voltage	1.7V
⑥ OUTPUT TERMINAL	2nd stage collector voltage	14.0V
⑦ + POWER SOURCE TERMINAL		25.0V

4-2 Adjustment of Current

1. Adjustment of current can be made in the manner identical to conventional method. It will be convenient to use the fuse holder terminals for DC ammeter.

That is, remove the fuse and connect the DC ammeter between terminals of fuse holder. (See Fig. 3)

2. Then adjust the semi-fixed resistor (VR702) so that the DC ammeter indicates 30mA.
3. Make this adjustment when the meter indication is stabilized about 5 minutes after the switch is turned on.

4-3 Adjustment of Voltage at Intermediate Point

1. Connect positive (+) side of the DC voltmeter to positive (+) side of electrolytic capacitor C7, and connect negative (−) side of the DC voltmeter to chassis. (See Fig. 3)
2. Adjust the semi-fixed resistor (VR701) so that the DC voltmeter indicates 37V.

MODEL 1A-1000 SERVICE MANUAL

4-4 Adjustment of Left-and-Right Balance of VU Meter (See Fig. 4)

1. Set the semi-fixed resistor (VR4) at about the center.
2. Turn the VU meter sensitivity change-over switch to "LOW" position and set the mode switch to "L + R" position.
3. Place the function selector at "TUNER" position, and add sine wave of 1 kHz to the input terminal of the tuner by the oscillator.
4. Turn up the volume to maximum level and adjust the output voltage of the oscillator so that both VU meters indicate about 100%.
5. Adjust the semi-fixed resistor (VR4) so that pointers of both VU meters deviate to the identical extent.

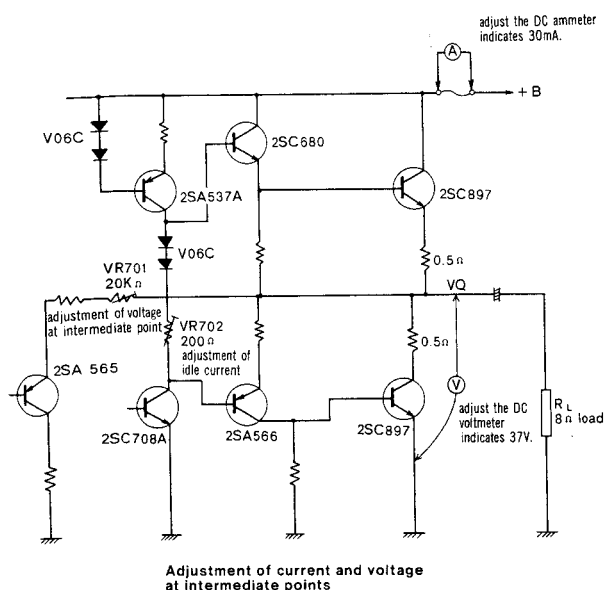


Fig. 3

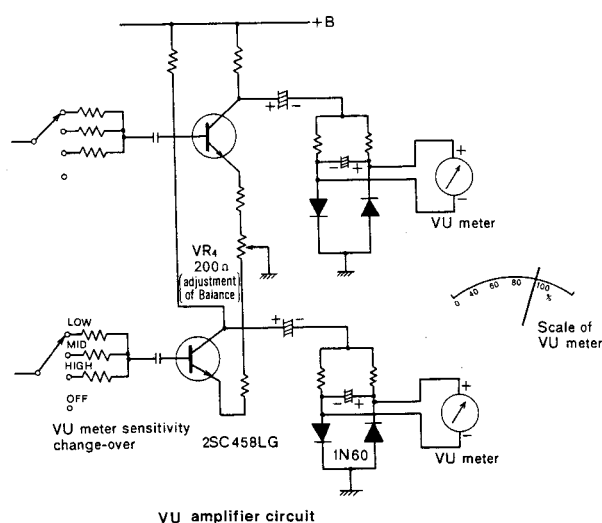
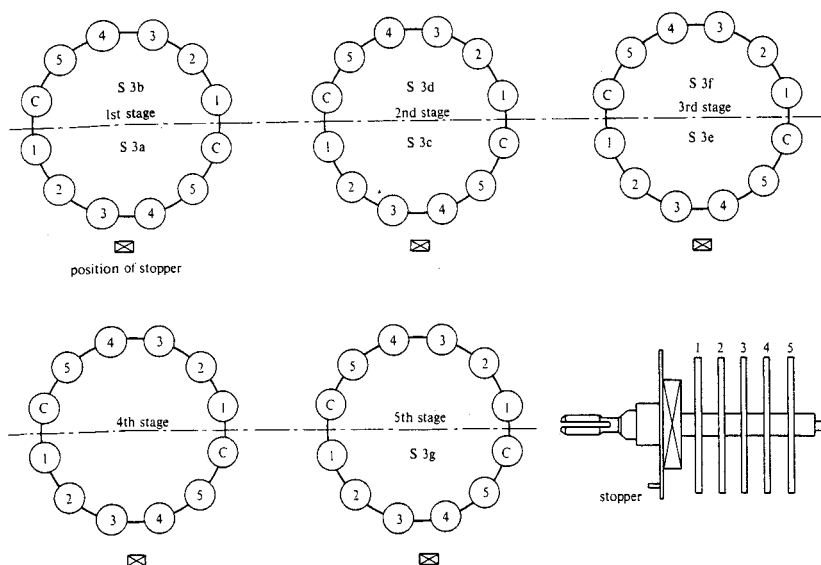


Fig. 4

4-5 Arrangement of rotary switch's terminals



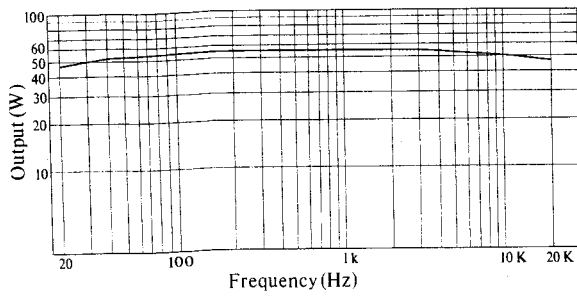
This figure shows a rotary switch viewed from its rear (arrow mark).
C implies COMMON, and implies the position of a stopper.

5. CHARACTERISTICS

POWER BAND WIDTH

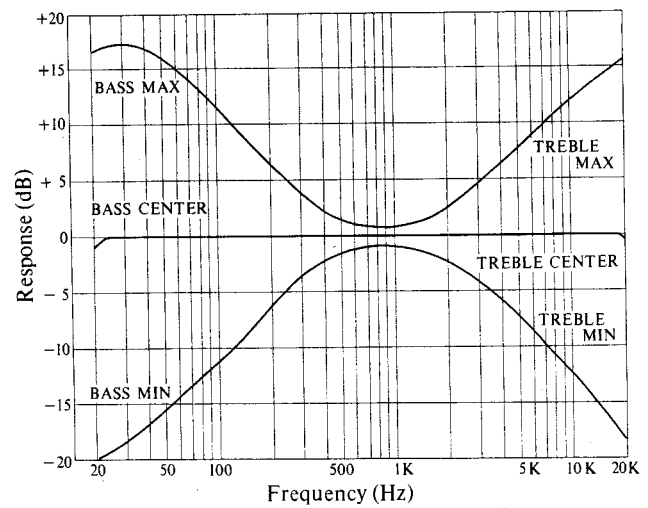
INPUT: TUNER

DISTORTION RATE : 0.5% constant

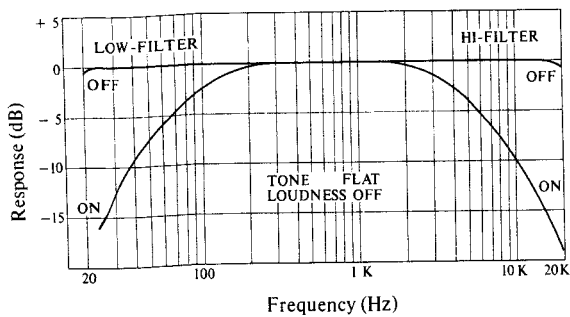


FREQUENCY CHARACTERISTIC

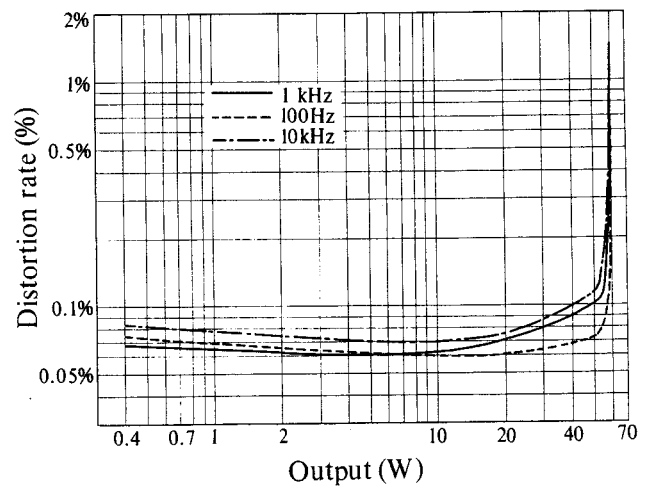
TONE CONTROL CHARACTERISTIC



FILTER CHARACTERISTIC

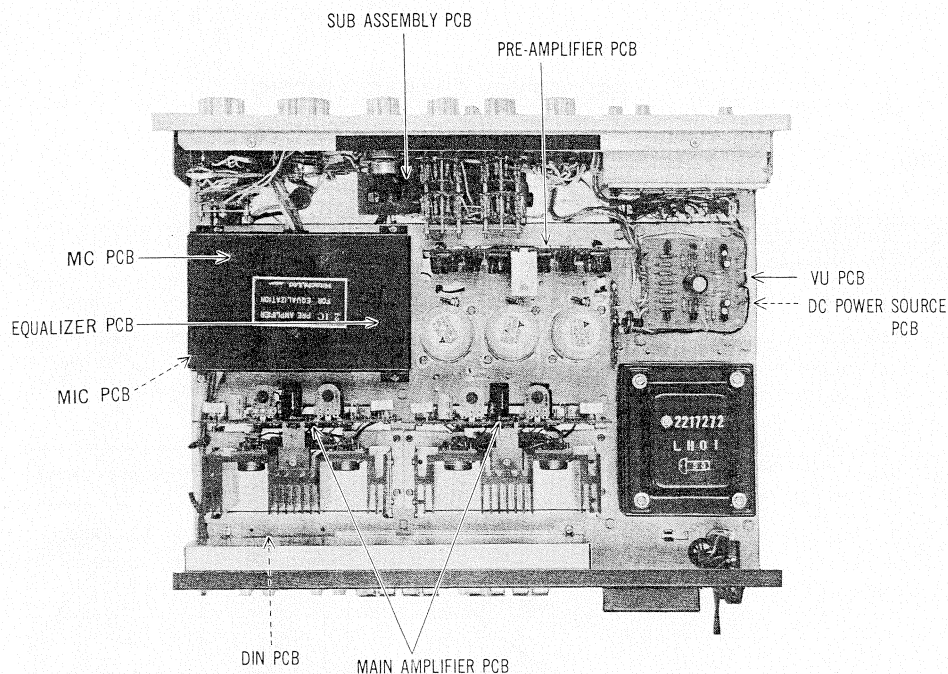


OUTPUT-AND-DISTORTION RATE



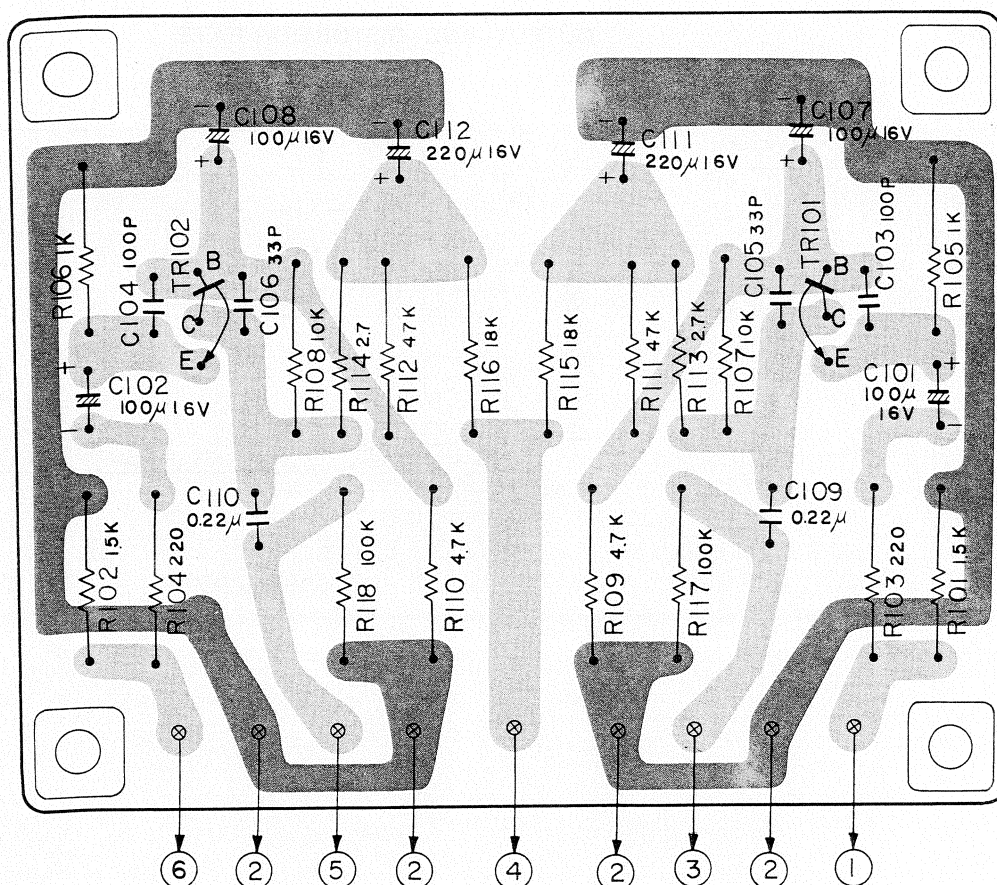
MODEL 1A-1000 SERVICE MANUAL

6. CHASSIS LAYOUT

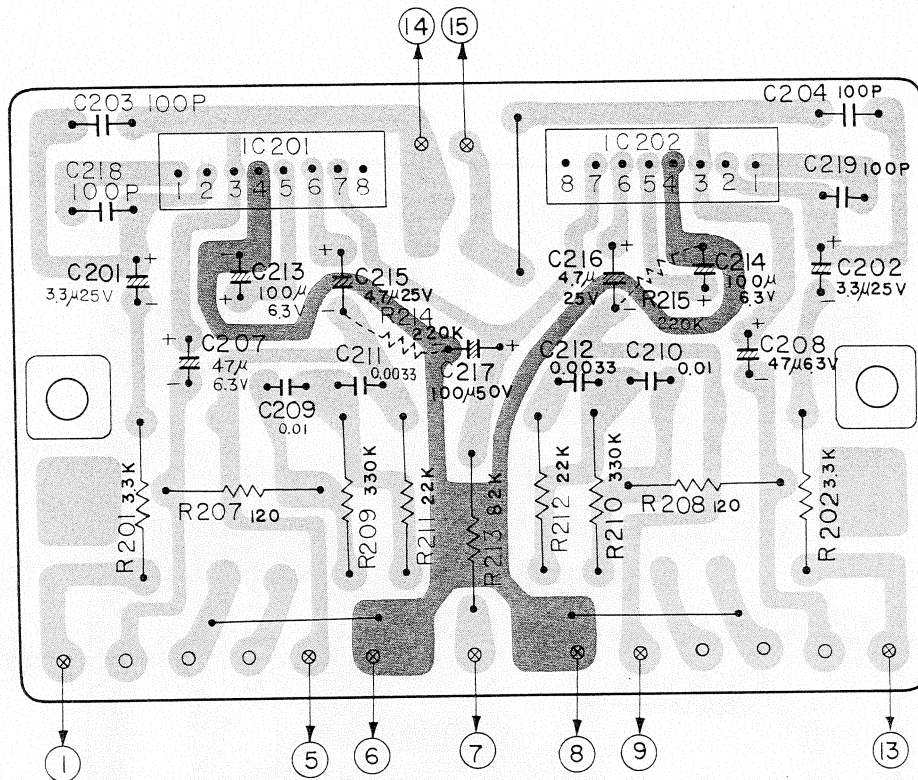


7. CIRCUIT BOARD

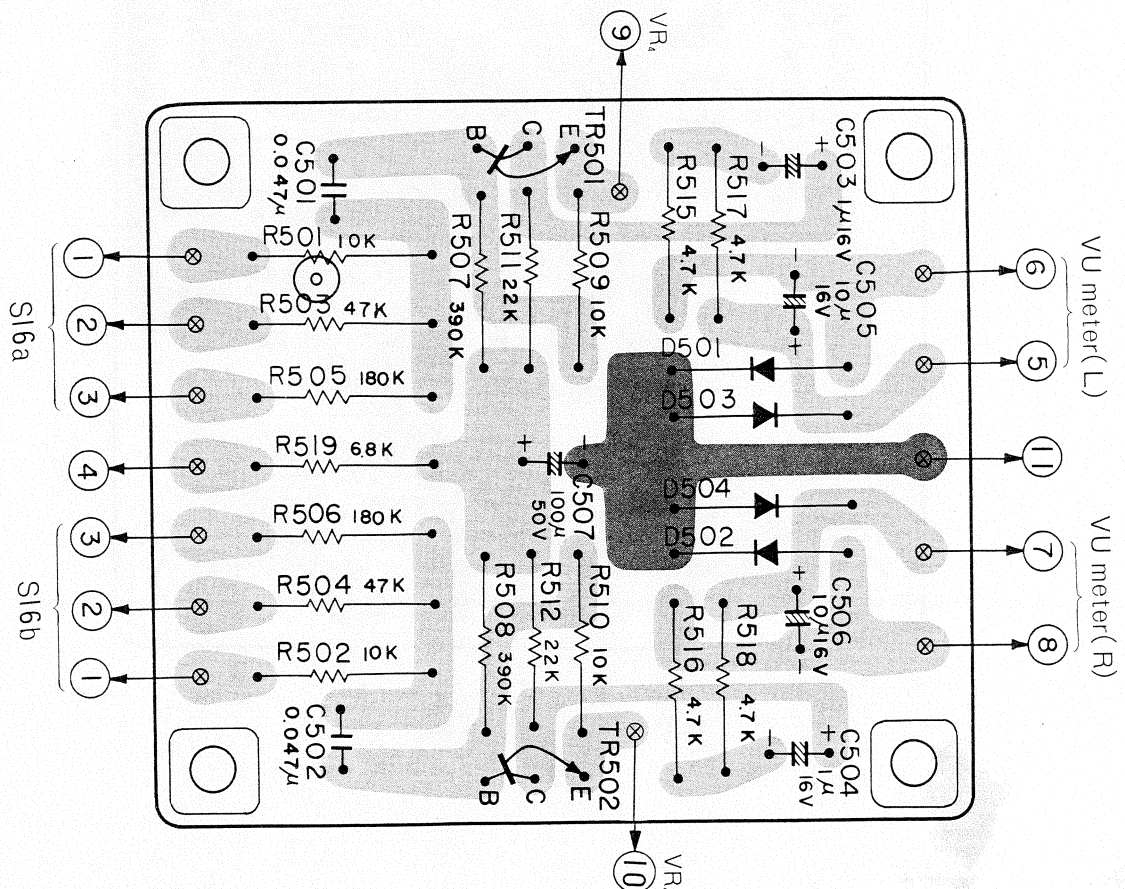
MC CIRCUIT BOARD



EQUALIZER CIRCUIT BOARD

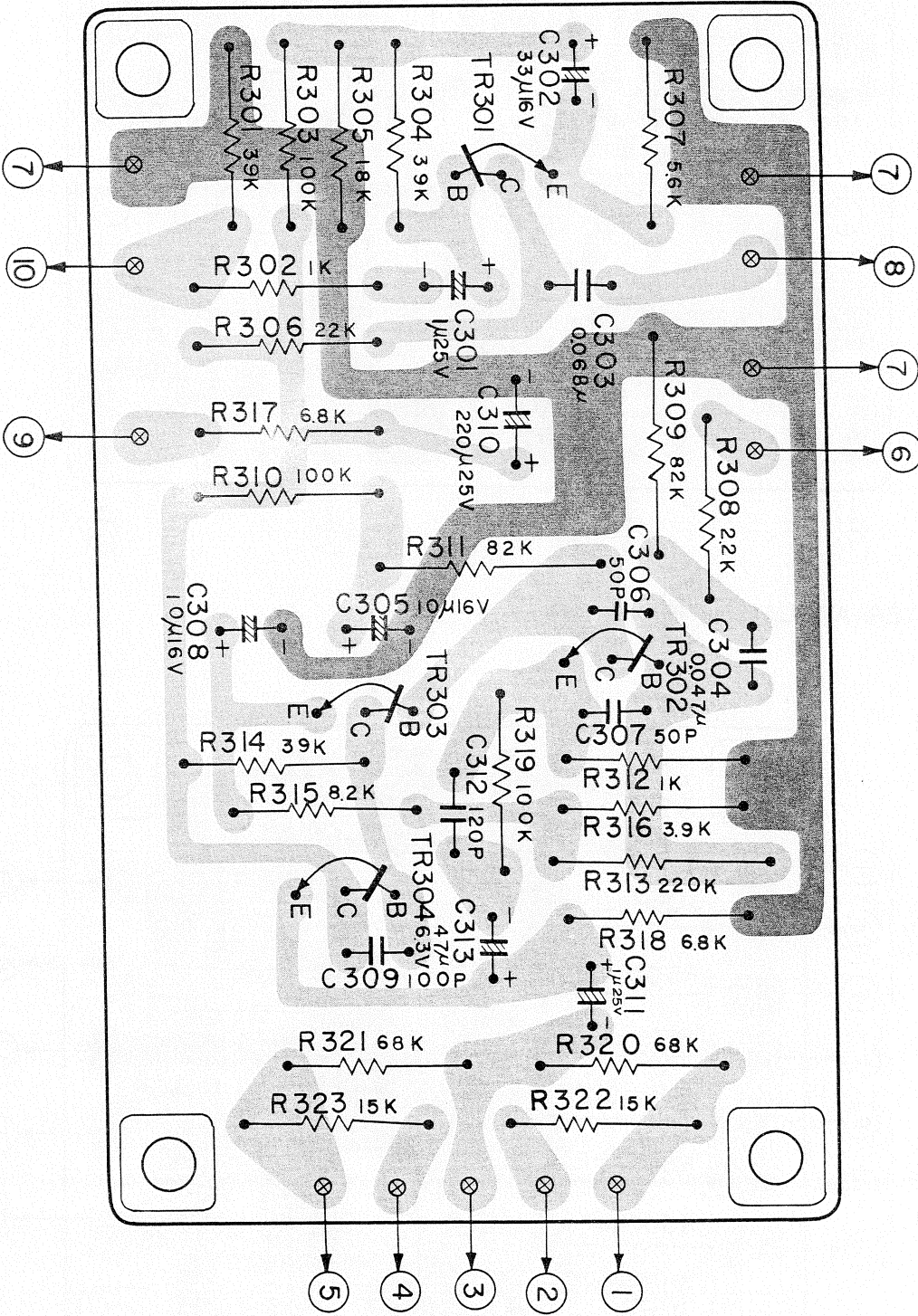


VU METER AMPLIFIER CIRCUIT BOARD

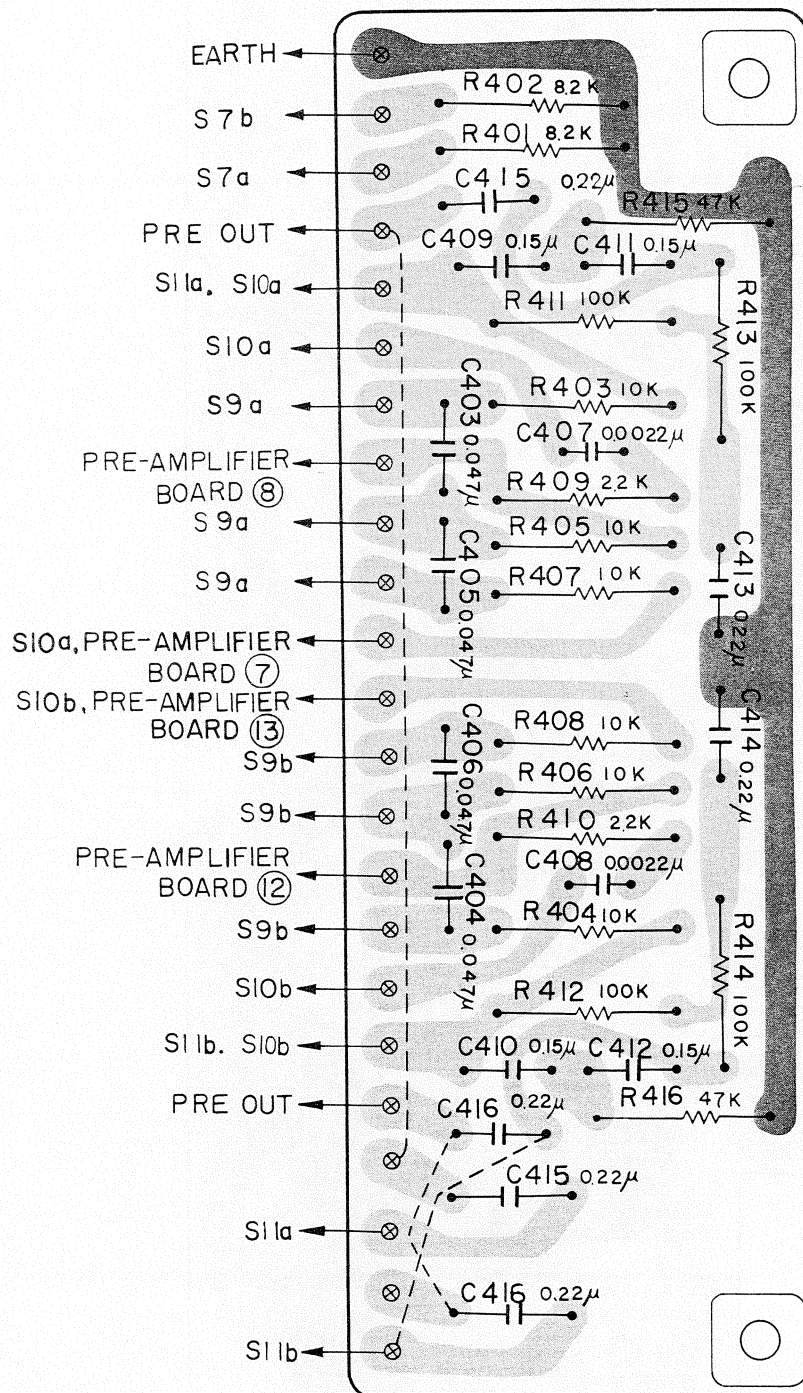


MODEL 1A-1000 SERVICE MANUAL

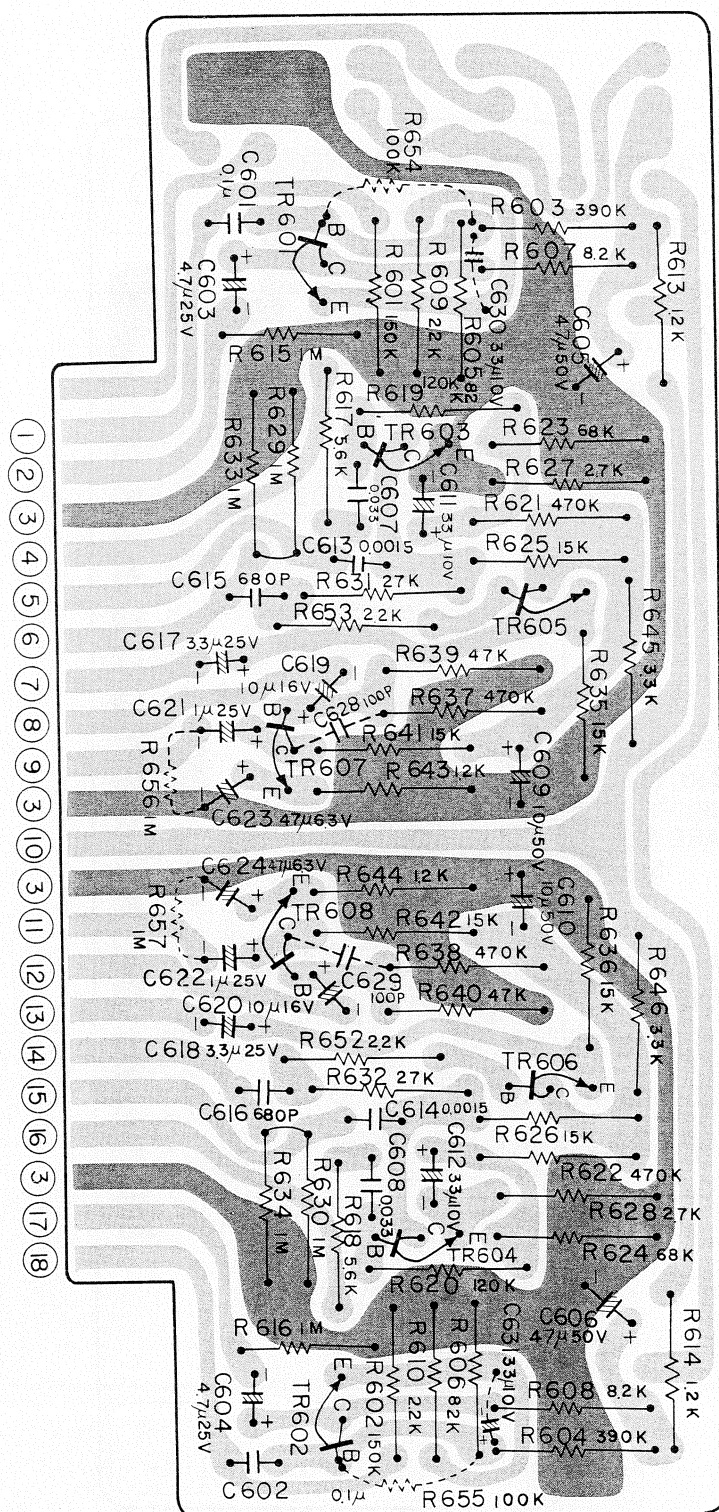
MIC AMPLIFIER CIRCUIT BOARD



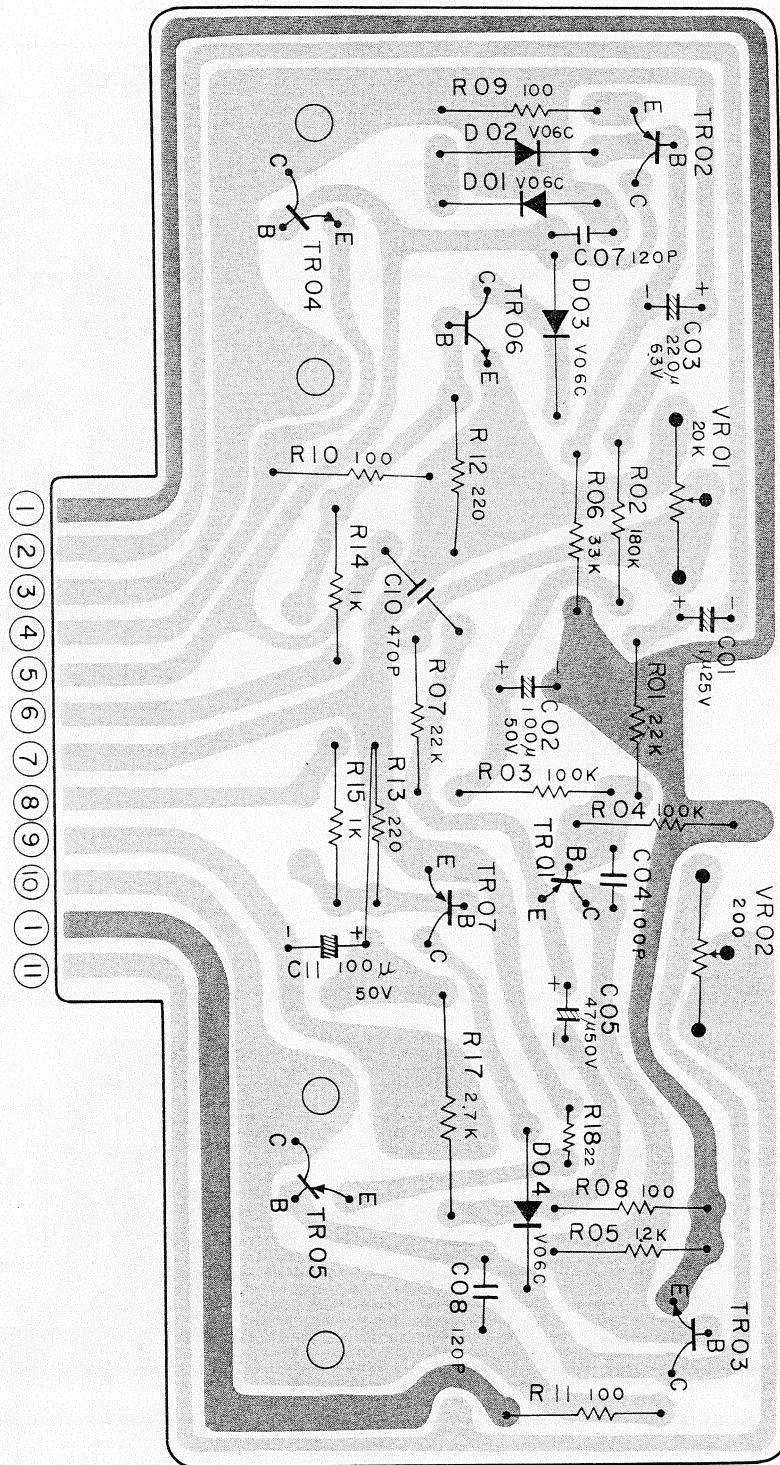
SUB ASSEMBLY CIRCUIT BOARD



PRE-AMPLIFIER CIRCUIT BOARD

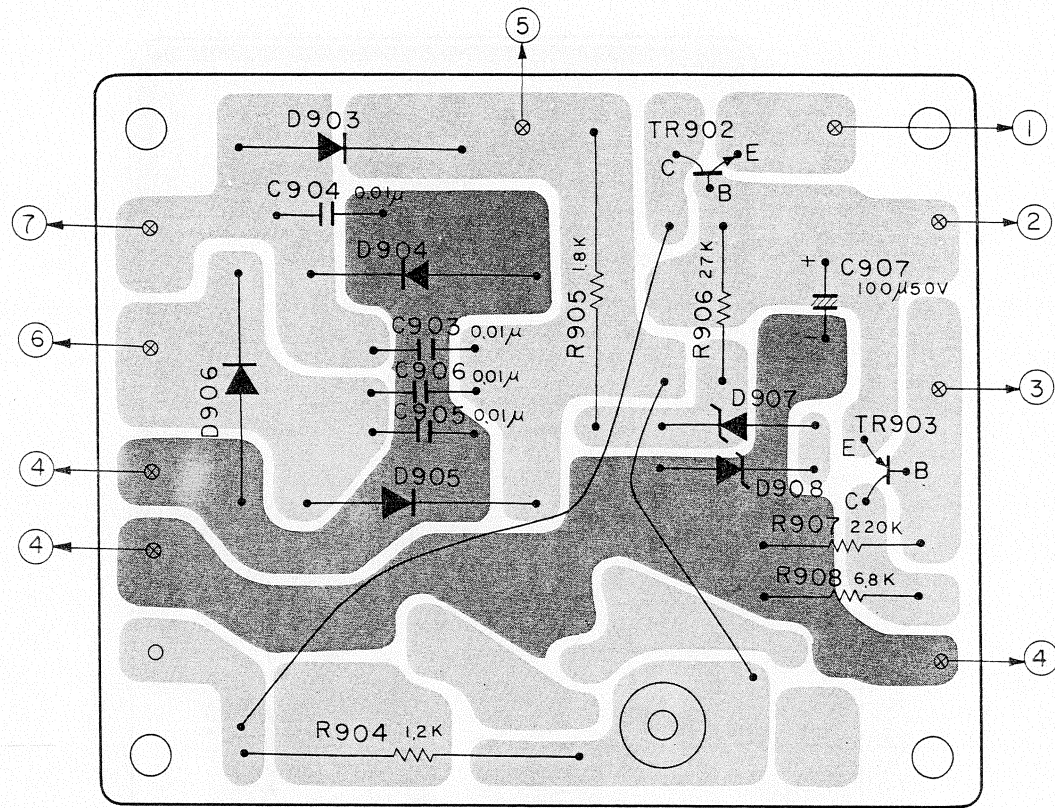


MAIN AMPLIFIER CIRCUIT BOARD

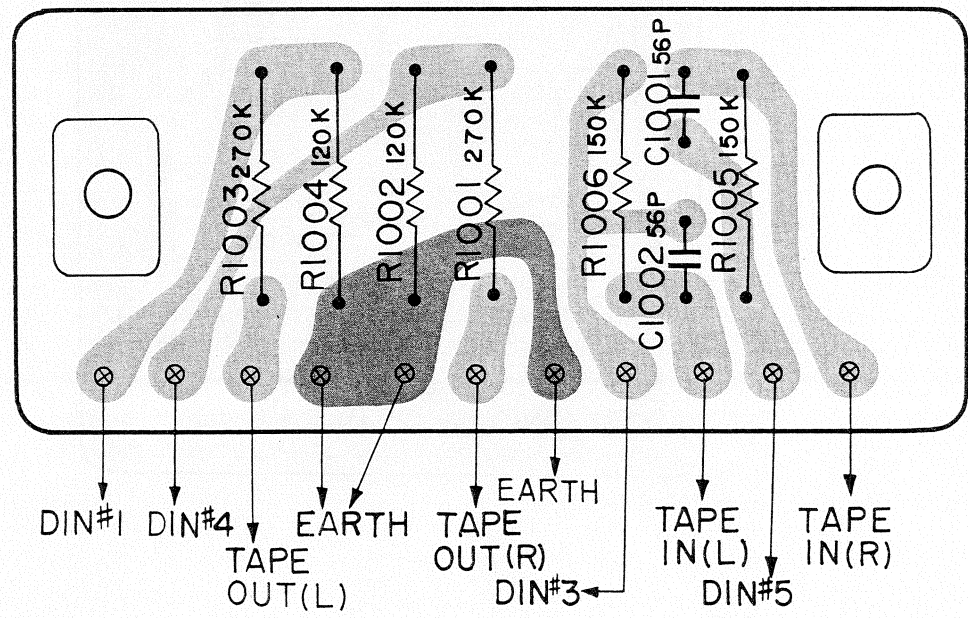


MODEL 1A-1000 SERVICE MANUAL

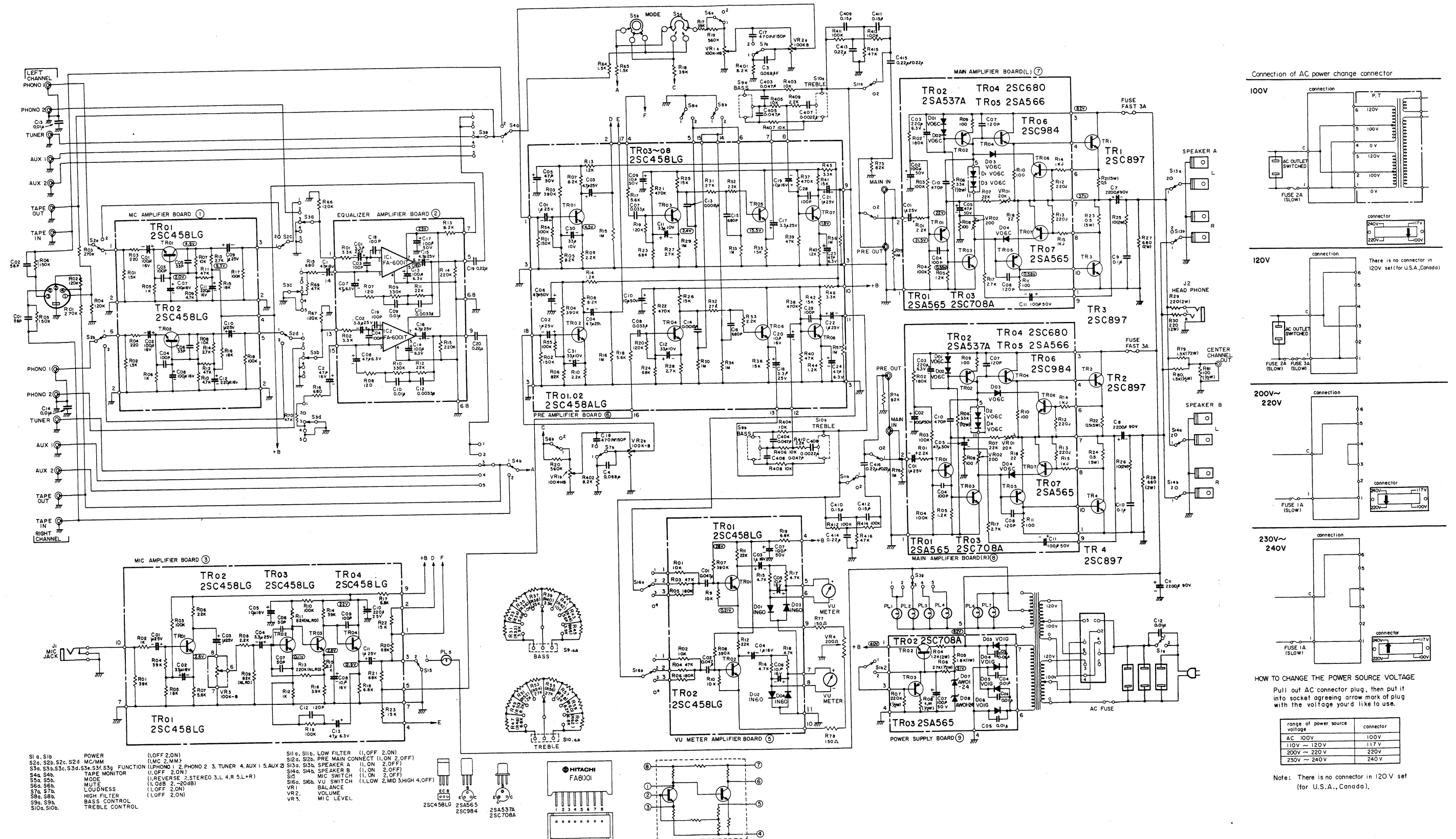
DC POWER SOURCE CIRCUIT BOARD



DIN CIRCUIT BOARD



8. CIRCUIT DIAGRAM



3. REPLACEMENT PARTS LIST

SYMBOL NO.		STOCK NO.		DESCRIPTION	
CAPACITORS					
for MC CIRCUIT BOARD					
C101	0252531	electrolytic	100μF	16V	
C102	0252531	electrolytic	100μF	16V	
C103	0248724	ceramic, discal	100pF	K	
C104	0248724	ceramic, discal	100pF	K	
C105	0248712	ceramic, discal	33pF	K	
C106	0248712	ceramic, discal	33pF	K	
C107	0252531	electrolytic	100μF	16V	
C108	0252531	electrolytic	100μF	16V	
C109	0276013	mylar, film	0.22μF	K	
C110	0276013	mylar, film	0.22μF	K	
C111	0252532	electrolytic	220μF	16V	
C112	0252532	electrolytic	220μF	16V	
for EQUALIZER CIRCUIT BOARD					
C201	0252613	electrolytic	3.3μF	25V	
C202	0252613	electrolytic	3.3μF	25V	
C203	0248724	ceramic, discal	100pF	K	
C204	0248724	ceramic, discal	100pF	K	
C207	0252225	electrolytic	47μF	6.3V	
C208	0252225	electrolytic	47μF	6.3V	
C209	0275011	mylar, film	0.01μF	K	
C210	0275011	mylar, film	0.01μF	K	
C211	0274014	mylar, film	0.0033μF	K	
C212	0274014	mylar, film	0.0033μF	K	
C213	0252231	electrolytic	100μF	6.3V	
C214	0252231	electrolytic	100μF	6.3V	
C215	0252615	electrolytic	4.7μF	25V	
C216	0252615	electrolytic	4.7μF	25V	
C217	0252831	electrolytic	100μF	50V	
C218	0248724	ceramic, discal	100pF	K	
C219	0248724	ceramic, discal	100pF	K	
for MIC AMPLIFIER CIRCUIT BOARD					
C301	0252611	electrolytic	1μF	25V	
C302	0252523	electrolytic	33μF	16V	
C303	0275016	mylar, film	0.068μF	K	
C304	0275015	mylar, film	0.047μF	K	
C305	0252521	electrolytic	10μF	16V	
C306	0242011	ceramic, discal	50pF	K	
C307	0242011	ceramic, discal	50pF	K	
C308	0252521	electrolytic	10μF	16V	
C309	0248724	ceramic, discal	100pF	K	
C310	0252632	electrolytic	220μF	25V	
C311	0252611	electrolytic	1μF	25V	
C312	0248726	ceramic, discal	120pF	K	
C313	0252225	electrolytic	47μF	6.3V	
for SUB ASSEMBLY CIRCUIT BOARD					
C403	0275015	mylar, film	0.047μF		
C404	0275015	mylar, film	0.047μF		
C405	0275015	mylar, film	0.047μF		
C406	0275015	mylar, film	0.047μF		
C407	0274013	mylar, film	0.0022μF		
C408	0274013	mylar, film	0.0022μF		
C409	0276012	mylar, film	0.15μF		
C410	0276012	mylar, film	0.15μF		
C411	0276012	mylar, film	0.15μF		
C412	0276012	mylar, film	0.15μF		
C413	0276013	mylar, film	0.22μF		
C414	0276013	mylar, film	0.22μF		
C415	0276013	mylar, film	0.22μF		
C416	0276013	mylar, film	0.22μF		
C416	0276013	mylar, film	0.22μF		

SYMBOL NO.		STOCK NO.		DESCRIPTION	
for VU METER AMPLIFIER CIRCUIT BOARD					
C501	0275015	mylar, film	0.047μF	K	
C502	0275015	mylar, film	0.047μF	K	
C503	0252611	electrolytic	1μF	16V	
C504	0252611	electrolytic	1μF	16V	
C505	0252521	electrolytic	10μF	16V	
C506	0252521	electrolytic	10μF	16V	
C507	0252831	electrolytic	100μF	50V	
for PRE-AMPLIFIER CIRCUIT BOARD					
C601	0276011	mylar, film	0.1μF	K	
C602	0276011	mylar, film	0.1μF	K	
C603	0252615	electrolytic	4.7μF	25V	
C604	0252615	electrolytic	4.7μF	25V	
C605	1252825	electrolytic	47μF	50V	
C606	1252825	electrolytic	47μF	50V	
C607	0275014	mylar, film	0.033μF	K	
C608	0275014	mylar, film	0.033μF	K	
C609	0252821	electrolytic	10μF	50V	
C610	0252821	electrolytic	10μF	50V	
C611	0252323	electrolytic	33μF	10V	
C612	0252323	electrolytic	33μF	10V	
C613	0274012	mylar, film	0.0015μF	K	
C614	0274012	mylar, film	0.0015μF	K	
C615	0221371	styrol	680pF	K	
C616	0221371	styrol	680pF	K	
C617	0252613	electrolytic	3.3μF	25V	
C618	0252613	electrolytic	3.3μF	25V	
C619	0252521	electrolytic	10μF	16V	
C620	0252521	electrolytic	10μF	16V	
C621	0252611	electrolytic	1μF	25V	
C622	0252611	electrolytic	1μF	25V	
C623	0252225	electrolytic	47μF	6.3V	
C624	0252225	electrolytic	47μF	6.3V	
C628	0248724	ceramic, discal	100pF	K	
C629	0248724	ceramic, discal	100pF	K	
C630	0252323	electrolytic	33μF	10V	
C631	0252323	electrolytic	33μF	10V	
for MAIN AMPLIFIER CIRCUIT BOARD					
C701	1252611	electrolytic	1μF	25V	
C702	1252831	electrolytic	100μF	50V	
C703	1252232	electrolytic	220μF	6.3V	
C704	0248724	ceramic, discal	100pF	K	
C705	1252825	electrolytic	47μF	50V	
C707	0248726	ceramic, discal	120pF	K	
C708	0248726	ceramic, discal	120pF	K	
C710	0221369	styrol	470pF	K	
C711	1252831	electrolytic	100μF	50V	
C801	1252611	electrolytic	1μF	25V	
C802	1252831	electrolytic	100μF	50V	
C803	1252232	electrolytic	220μF	6.3V	
C804	0248724	ceramic, discal	100pF	K	
C805	1252825	electrolytic	47μF	50V	
C807	0248726	ceramic, discal	120pF	K	
C808	0248726	ceramic, discal	120pF	K	
C810	0221369	styrol	470pF	K	
C811	1252831	electrolytic	100μF	50V	
for DC POWER SOURCE CIRCUIT BOARD					
C903	0245408	ceramic, discal	0.01μF	500V	
C904	0245408	ceramic, discal	0.01μF	500V	

SYMBOL NO.		STOCK NO.		DESCRIPTION		SYMBOL NO.		STOCK NO.		DESCRIPTION	
C905	0245408	ceramic, discal	0.01μF	500V		R304	1114528	carbon, film	39kΩ	K	SRD¼P
C906	0245408	ceramic, discal	0.01μF	500V		R305	1114524	carbon, film	18kΩ	K	SRD¼P
C907	1252831	electrolytic	100μF	50V		R306	1114525	carbon, film	22kΩ	K	SRD¼P
for DIN CIRCUIT BOARD						R307	1114470	carbon, film	5.6kΩ	K	SRD¼P
C1001	0248718	ceramic, discal	56pF	K		R308	1114465	carbon, film	2.2kΩ	K	SRD¼P
C1002	0248718	ceramic, discal	56pF	K		R309	0112474	carbon, film	82kΩ	K	NLRD¼P
for CHASSIS ASSEMBLY						R310	1114541	carbon, film	100kΩ	K	SRD¼P
C 1	0252525	electrolytic	47μF			R311	0112474	carbon, film	82kΩ	K	NLRD¼P
C 2	0252525	electrolytic	47μF			R312	1114461	carbon, film	1kΩ	K	SRD¼P
C 3	0275016	mylar, film	0.068μF	K		R313	0112537	carbon, film	220kΩ	K	NLRD¼P
C 4	0275016	mylar, film	0.068μF	K		R314	1114528	carbon, film	39kΩ	K	SRD¼P
C 7	0259797	mylar, film	2200μF		90V	R315	1114472	carbon, film	8.2kΩ	K	SRD¼P
C 8	0259797	mylar, film	2200μF		90V	R316	1114468	carbon, film	3.9kΩ	K	SRD¼P
C 9	0276011	mylar, film	0.1μ	K		R317	1114471	carbon, film	6.8kΩ	K	SRD¼P
C 10	0276011	mylar, film	0.1μ	K		R318	1114471	carbon, film	6.8kΩ	K	SRD¼P
C 11	0259797	electrolytic	2200μF		90V	R319	1114531	carbon, film	100kΩ	K	SRD¼P
C 12	0214469	ceramic, discal	0.01μF	K		R320	1114541	carbon, film	68kΩ	K	SRD¼P
C 13	0275011	mylar, film	0.01μF	K		R321	1114541	carbon, film	68kΩ	K	SRD¼P
C 14	0275011	mylar, film	0.01μF	K		R322	1114531	carbon, film	15kΩ	K	SRD¼P
C 17	0243415	ceramic, discal	470pF	J		R323	1114531	carbon, film	15kΩ	K	SRD¼P
	0248728	ceramic, discal	150pF	K	50V	for SUB ASSEMBLY CIRCUIT BOARD					
C 18	0243415	ceramic, discal	470pF	J		R401	1114472	carbon, film	8.2kΩ	K	SRD¼P
	0248728	ceramic, discal	150pF	K	50V	R402	1114472	carbon, film	8.2kΩ	K	SRD¼P
C 19	0276013	mylar, film	0.22μF	K	50V	R403	1114521	carbon, film	10kΩ	K	SRD¼P
C 20	0276013	mylar, film	0.22μF	K	50V	R404	1114521	carbon, film	10kΩ	K	SRD¼P
RESISTORS						R405	1114521	carbon, film	10kΩ	K	SRD¼P
for MC CIRCUIT BOARD						R406	1114521	carbon, film	10kΩ	K	SRD¼P
R101	1114463	carbon, film	1.5kΩ	K	SRD¼P	R407	1114521	carbon, film	10kΩ	K	SRD¼P
R102	1114463	carbon, film	1.5kΩ	K	SRD¼P	R408	1114521	carbon, film	10kΩ	K	SRD¼P
R103	1114445	carbon, film	220 Ω	K	SRD¼P	R409	1114465	carbon, film	2.2kΩ	K	SRD¼P
R104	1114445	carbon, film	220 Ω	K	SRD¼P	R410	1114465	carbon, film	2.2kΩ	K	SRD¼P
R105	1114461	carbon, film	1kΩ	K	SRD¼P	R411	1114541	carbon, film	100kΩ	K	SRD¼P
R106	1114461	carbon, film	1kΩ	K	SRD¼P	R412	1114541	carbon, film	100kΩ	K	SRD¼P
R107	1114521	carbon, film	10kΩ	K	SRD¼P	R413	1114541	carbon, film	100kΩ	K	SRD¼P
R108	1114521	carbon, film	10kΩ	K	SRD¼P	R414	1114541	carbon, film	100kΩ	K	SRD¼P
R109	1114469	carbon, film	4.7kΩ	K	SRD¼P	R415	1114529	carbon, film	47kΩ	K	SRD¼P
R110	1114469	carbon, film	4.7kΩ	K	SRD¼P	R416	1114529	carbon, film	47kΩ	K	SRD¼P
R111	1114529	carbon, film	47kΩ	K	SRD¼P	for VU METER AMPLIFIER CIRCUIT BOARD					
R112	1114529	carbon, film	47kΩ	K	SRD¼P	R501	1114521	carbon, film	10kΩ	K	SRD¼P
R113	1114461	carbon, film	2.7kΩ	K	SRD¼P	R502	1114521	carbon, film	10kΩ	K	SRD¼P
R114	1114461	carbon, film	2.7kΩ	K	SRD¼P	R503	1114529	carbon, film	47kΩ	K	SRD¼P
R115	1114524	carbon, film	18kΩ	K	SRD¼P	R504	1114529	carbon, film	47kΩ	K	SRD¼P
R116	1114524	carbon, film	18kΩ	K	SRD¼P	R505	1114544	carbon, film	180kΩ	K	SRD¼P
R117	1114541	carbon, film	100kΩ	K	SRD¼P	R506	1114544	carbon, film	180kΩ	K	SRD¼P
R118	1114541	carbon, film	100kΩ	K	SRD¼P	R507	1114548	carbon, film	390kΩ	K	SRD¼P
for EQUALIZER CIRCUIT BOARD						R508	1114548	carbon, film	390kΩ	K	SRD¼P
R201	1114467	carbon, film	3.3kΩ	K	SRD¼P	R509	1114521	carbon, film	10kΩ	K	SRD¼P
R202	1114467	carbon, film	3.3kΩ	K	SRD¼P	R510	1114521	carbon, film	10kΩ	K	SRD¼P
R207	1114442	carbon, film	120 Ω	K	SRD¼P	R511	1114525	carbon, film	22kΩ	K	SRD¼P
R208	1114442	carbon, film	120 Ω	K	SRD¼P	R512	1114525	carbon, film	22kΩ	K	SRD¼P
R209	1114547	carbon, film	330kΩ	K	SRD¼P	for PRE-AMPLIFIER CIRCUIT BOARD					
R210	1114547	carbon, film	330kΩ	K	SRD¼P	R601	1114543	carbon, film	150kΩ	K	SRD¼P
R211	1114525	carbon, film	22kΩ	K	SRD¼P	R602	1114543	carbon, film	150kΩ	K	SRD¼P
R212	1114525	carbon, film	22kΩ	K	SRD¼P	R603	1114548	carbon, film	390kΩ	K	SRD¼P
R213	1114472	carbon, film	8.2kΩ	K	SRD¼P	R604	1114548	carbon, film	390kΩ	K	SRD¼P
R214	1114545	carbon, film	220kΩ	K	SRD¼P	R605	1114532	carbon, film	82kΩ	K	SRD¼P
R215	1114545	carbon, film	220kΩ	K	SRD¼P	R606	1114532	carbon, film	82kΩ	K	SRD¼P
for MIC AMPLIFIER CIRCUIT BOARD						R607	1114472	carbon, film	8.2kΩ	K	SRD¼P
R301	1114528	carbon, film	39kΩ	K	SRD¼P	R608	1114472	carbon, film	8.2kΩ	K	SRD¼P
R302	1114461	carbon, film	1kΩ	K	SRD¼P	R609	1114465	carbon, film	2.2kΩ	K	SRD¼P
R303	1114541	carbon, film	100kΩ	K	SRD¼P						

MODEL 1A-1000 SERVICE MANUAL

SYMBOL NO.	STOCK NO.	DESCRIPTION					SYMBOL NO.	STOCK NO.	DESCRIPTION				
R610	1114465	carbon, film	2.2k Ω	K	SRD $\frac{1}{4}$ P		R804	1114541	carbon, film	100k Ω	K	SRD $\frac{1}{4}$ P	
R613	1114462	carbon, film	1.2k Ω	K	SRD $\frac{1}{4}$ P		R805	1114462	carbon, film	1.2k Ω	K	SRD $\frac{1}{4}$ P	
R614	1114462	carbon, film	1.2k Ω	K	SRD $\frac{1}{4}$ P		R806	0134391	composition	33k Ω	K	RC $\frac{1}{2}$ GF	
R615	0131844	composition	1M Ω	K	RC $\frac{1}{2}$ GF		R807	0114525	carbon, film	22k Ω	K	SRD $\frac{1}{4}$ P	
R616	0131844	composition	1M Ω	K	RC $\frac{1}{2}$ GF		R808	1114441	carbon, film	100 Ω	K	SRD $\frac{1}{4}$ P	
R617	1114470	carbon, film	5.6k Ω	K	SRD $\frac{1}{4}$ P		R809	1114441	carbon, film	100 Ω	K	SRD $\frac{1}{4}$ P	
R618	1114470	carbon, film	5.6k Ω	K	SRD $\frac{1}{4}$ P		R810	1114441	carbon, film	100 Ω	K	SRD $\frac{1}{4}$ P	
R619	1114542	carbon, film	120k Ω	K	SRD $\frac{1}{4}$ P		R811	1114441	carbon, film	100 Ω	K	SRD $\frac{1}{4}$ P	
R620	1114542	carbon, film	120k Ω	K	SRD $\frac{1}{4}$ P		R812	1114139	carbon, film	220 Ω	J	SRD $\frac{1}{4}$ P	
R621	1114549	carbon, film	470k Ω	K	SRD $\frac{1}{4}$ P		R813	1114139	carbon, film	220 Ω	J	SRD $\frac{1}{4}$ P	
R622	1114549	carbon, film	470k Ω	K	SRD $\frac{1}{4}$ P		R814	1114161	carbon, film	1k Ω	J	SRD $\frac{1}{4}$ P	
R623	1114531	carbon, film	68k Ω	K	SRD $\frac{1}{4}$ P		R815	1114161	carbon, film	1k Ω	J	SRD $\frac{1}{4}$ P	
R624	1114531	carbon, film	68k Ω	K	SRD $\frac{1}{4}$ P		R817	1114464	carbon, film	2.7k Ω	J	SRD $\frac{1}{4}$ P	
R625	1114523	carbon, film	15k Ω	K	SRD $\frac{1}{4}$ P		R818	0138293	carbon, film	22 Ω	J	SRD $\frac{1}{4}$ SD	
R626	1114523	carbon, film	15k Ω	K	SRD $\frac{1}{4}$ P		for DC POWER SOURCE CIRCUIT BOARD						
R627	1114466	carbon, film	2.7k Ω	K	SRD $\frac{1}{4}$ P		R904	0111419	carbon, film	1.2k Ω	K	RD2PA	
R628	1114466	carbon, film	2.7k Ω	K	SRD $\frac{1}{4}$ P		R905	0111246	carbon, film	1.8k Ω	K	RD1PA	
R629	0131844	composition	1M Ω	K	RC $\frac{1}{2}$ GF		R906	0134390	composition	27k Ω	K	RC $\frac{1}{2}$ GF	
R630	0131844	composition	1M Ω	K	RC $\frac{1}{2}$ GF		R907	0134401	composition	220k Ω	K	RC $\frac{1}{2}$ GF	
R631	1114526	carbon, film	27k Ω	K	SRD $\frac{1}{4}$ P		R908	0134383	composition	6.8k Ω	K	RC $\frac{1}{2}$ GF	
R632	1114526	carbon, film	27k Ω	K	SRD $\frac{1}{4}$ P		for DIN CIRCUIT BOARD						
R633	0131844	composition	1M Ω	K	RC $\frac{1}{2}$ GF		R1001	1114546	carbon, film	270k Ω	K	SRD $\frac{1}{4}$ P	
R634	0131844	composition	1M Ω	K	RC $\frac{1}{2}$ GF		R1002	1114542	carbon, film	120k Ω	K	SRD $\frac{1}{4}$ P	
R635	1114523	carbon, film	15k Ω	K	SRD $\frac{1}{4}$ P		R1003	1114546	carbon, film	270k Ω	K	SRD $\frac{1}{4}$ P	
R636	1114523	carbon, film	15k Ω	K	SRD $\frac{1}{4}$ P		R1004	1114542	carbon, film	120k Ω	K	SRD $\frac{1}{4}$ P	
R637	1114549	carbon, film	470k Ω	K	SRD $\frac{1}{4}$ P		R1005	1114543	carbon, film	150k Ω	K	SRD $\frac{1}{4}$ P	
R638	1114549	carbon, film	470k Ω	K	SRD $\frac{1}{4}$ P		R1006	1114543	carbon, film	150k Ω	K	SRD $\frac{1}{4}$ P	
R639	1114529	carbon, film	47k Ω	K	SRD $\frac{1}{4}$ P		for CHASSIS ASSEMBLY						
R640	1114529	carbon, film	47k Ω	K	SRD $\frac{1}{4}$ P		R 15	0114451	carbon, film	680 Ω	K	SRD $\frac{1}{4}$ P	
R641	1114523	carbon, film	15k Ω	K	SRD $\frac{1}{4}$ P		R 16	0114451	carbon, film	680 Ω	K	SRD $\frac{1}{4}$ P	
R642	1114523	carbon, film	15k Ω	K	SRD $\frac{1}{4}$ P		R 17	0114528	carbon, film	39k Ω	K	SRD $\frac{1}{4}$ P	
R643	1114462	carbon, film	1.2k Ω	K	SRD $\frac{1}{4}$ P		R 18	0114528	carbon, film	39k Ω	K	SRD $\frac{1}{4}$ P	
R644	1114462	carbon, film	1.2k Ω	K	SRD $\frac{1}{4}$ P		R 19	0131810	composition	560k Ω	K	RC $\frac{1}{2}$ GF	
R645	1114467	carbon, film	3.3k Ω	K	SRD $\frac{1}{4}$ P		R 20	0131810	composition	560k Ω	K	RC $\frac{1}{2}$ GF	
R646	1114467	carbon, film	3.3k Ω	K	SRD $\frac{1}{4}$ P		R 21	0142228	wire-wound	0.5 Ω	K	RWC5PS	
R652	1114465	carbon, film	2.2k Ω	K	SRD $\frac{1}{4}$ P		R 22	0142228	wire-wound	0.5 Ω	K	RWC5PS	
R653	1114465	carbon, film	2.2k Ω	K	SRD $\frac{1}{4}$ P		R 23	0142228	wire-wound	0.5 Ω	K	RWC5PS	
R654	0114541	carbon, film	100k Ω	K	SRD $\frac{1}{4}$ P		R 24	0142228	wire-wound	0.5 Ω	K	RWC5PS	
R655	0114541	carbon, film	100k Ω	K	SRD $\frac{1}{4}$ P		R 25	0142229	wire-wound	10 Ω	K	RWC2PS	
R656	0131844	composition	1M Ω	K	RC $\frac{1}{2}$ GF		R 26	0142229	wire-wound	10 Ω	K	RWC2PS	
R657	0131844	composition	1M Ω	K	RC $\frac{1}{2}$ GF		R 27	0111416	metal oxide	680 Ω	K	RDZPA	
for MAIN AMPLIFIER CIRCUIT BOARD							R 28	0111416	metal oxide	680 Ω	K	RDZPA	
R701	1114465	carbon, film	2.2k Ω	K	SRD $\frac{1}{4}$ P		R 29	0111410	metal oxide	220 Ω	K	RDZPA	
R702	1114544	carbon, film	180k Ω	K	SRD $\frac{1}{4}$ P		R 30	0111410	metal oxide	220 Ω	K	RDZPA	
R703	1114541	carbon, film	100k Ω	K	SRD $\frac{1}{4}$ P		R 31	0114468	carbon, film	3.9k Ω	K	SRD $\frac{1}{4}$ P	
R704	1114541	carbon, film	100k Ω	K	SRD $\frac{1}{4}$ P		R 32	0114468	carbon, film	3.9k Ω	K	SRD $\frac{1}{4}$ P	
R705	1114462	carbon, film	1.2k Ω	K	SRD $\frac{1}{4}$ P		R 33	0114470	carbon, film	5.6k Ω	K	SRD $\frac{1}{4}$ P	
R706	0134371	composition	33k Ω	K	RC $\frac{1}{2}$ GF		R 34	0114470	carbon, film	5.6k Ω	K	SRD $\frac{1}{4}$ P	
R707	0114525	carbon, film	22k Ω	K	SRD $\frac{1}{4}$ P		R 35	0114521	carbon, film	10k Ω	K	SRD $\frac{1}{4}$ P	
R708	1114441	carbon, film	100 Ω	K	SRD $\frac{1}{4}$ P		R 36	0114521	carbon, film	10k Ω	K	SRD $\frac{1}{4}$ P	
R709	1114441	carbon, film	100 Ω	K	SRD $\frac{1}{4}$ P		R 37	0114527	carbon, film	33k Ω	K	SRD $\frac{1}{4}$ P	
R710	1114441	carbon, film	100 Ω	K	SRD $\frac{1}{4}$ P		R 38	0114527	carbon, film	33k Ω	K	SRD $\frac{1}{4}$ P	
R711	1114441	carbon, film	100 Ω	K	SRD $\frac{1}{4}$ P		R 39	0114527	carbon, film	33k Ω	K	SRD $\frac{1}{4}$ P	
R712	1114139	carbon, film	220 Ω	J	SRD $\frac{1}{4}$ P		R 40	0114527	carbon, film	33k Ω	K	SRD $\frac{1}{4}$ P	
R713	1114139	carbon, film	220 Ω	J	SRD $\frac{1}{4}$ P		R 41	0114521	carbon, film	10k Ω	K	SRD $\frac{1}{4}$ P	
R714	1114161	carbon, film	1k Ω	J	SRD $\frac{1}{4}$ P		R 42	0114521	carbon, film	10k Ω	K	SRD $\frac{1}{4}$ P	
R715	1114161	carbon, film	1k Ω	J	SRD $\frac{1}{4}$ P		R 43	0114470	carbon, film	5.6k Ω	K	SRD $\frac{1}{4}$ P	
R717	1114464	carbon, film	2.7k Ω	J	SRD $\frac{1}{4}$ P		R 44	0114470	carbon, film	5.6k Ω	K	SRD $\frac{1}{4}$ P	
R718	0138293	carbon, film	22 Ω	J	SRD $\frac{1}{4}$ SD		R 45	0114468	carbon, film	3.9k Ω	K	SRD $\frac{1}{4}$ P	
R801	1114465	carbon, film	2.2k Ω	K	SRD $\frac{1}{4}$ P		R 46	0114468	carbon, film	3.9k Ω	K	SRD $\frac{1}{4}$ P	
R802	1114544	carbon, film	180k Ω	K	SRD $\frac{1}{4}$ P		R 47	0114471	carbon, film	6.8k Ω	K	SRD $\frac{1}{4}$ P	
R803	1114541	carbon, film	100k Ω	K	SRD $\frac{1}{4}$ P		R 48	0114471	carbon, film	6.8k Ω	K	SRD $\frac{1}{4}$ P	
							R 49	0114472	carbon, film	8.2k Ω	K	SRD $\frac{1}{4}$ P	
							R 50	0114472	carbon, film	8.2k Ω	K	SRD $\frac{1}{4}$ P	
							R 51	0114522	carbon, film	12k Ω	K	SRD $\frac{1}{4}$ P	

MODEL 1A-1000 SERVICE MANUAL

SYMBOL NO.	STOCK NO.	DESCRIPTION				SYMBOL NO.	STOCK NO.	DESCRIPTION			
R 52	0114522	carbon, film	12kΩ	K	SRD¼P	TR706	2327022	2SC 984 ⓑ			
R 53	0114526	carbon, film	27kΩ	K	SRD¼P	TR707	2320161	2SA 565 ⓑ			
R 54	0114526	carbon, film	27kΩ	K	SRD¼P						
R 55	0114526	carbon, film	27kΩ	K	SRD¼P	TR801	2320161	2SA 565 ⓑ			
R 56	0114526	carbon, film	27kΩ	K	SRD¼P	TR802	2320242	2SA 537A ⓑ			
R 57	0114522	carbon, film	12kΩ	K	SRD¼P	TR803	2320232	2SC 708A ⓑ			
R 58	0114522	carbon, film	12kΩ	K	SRD¼P	TR804	2327182	2SC 680 ⓑ			
R 59	0114472	carbon, film	8.2kΩ	K	SRD¼P	TR805	2327192	2SA 566 ⓑ			
R 60	0114472	carbon, film	8.2kΩ	K	SRD¼P	TR806	2327022	2SC 984 ⓑ			
R 61	0114471	carbon, film	6.8kΩ	K	SRD¼P	TR807	2320161	2SA 565 ⓑ			
R 62	0114471	carbon, film	6.8kΩ	K	SRD¼P						
R 64	0114463	carbon, film	1.5kΩ	K	SRD¼P	for DC POWER SOURCE CIRCUIT BOARD					
R 65	0114463	carbon, film	1.5kΩ	K	SRD¼P	TR902	2320232	2SC 708A ⓑ			
R 66	0114542	carbon, film	120Ω	K	SRD¼P	TR903	2320161	2SA 565 ⓑ			
R 67	0114542	carbon, film	120Ω	K	SRD¼P						
R 69	0114529	carbon, film	47kΩ	K	SRD¼P	for CHASSIS ASSEMBLY					
R 70	0114529	carbon, film	47kΩ	K	SRD¼P	TR 1	2327172	2SC 897 ⓑ			
R 73	0114532	carbon, film	82kΩ	K	SRD¼P	TR 2	2327172	2SC 897 ⓑ			
R 74	0114532	carbon, film	82kΩ	K	SRD¼P	TR 3	2327172	2SC 897 ⓑ			
R 75	0131844	composition	1MΩ	K	RC¼GF	TR 4	2327172	2SC 897 ⓑ			
R 76	0131844	composition	1MΩ	K	RC¼GF						
R 77	0114443	carbon, film	150Ω	K	SRD¼P	DIODES					
R 78	0114443	carbon, film	150Ω	K	SRD¼P						
R 79	0134375	composition	1.5kΩ	K	RC¼GF	for VU METER AMPLIFIER CIRCUIT BOARD					
R 80	0134375	composition	1.5kΩ	K	RC¼GF	D501	0575019	IN60P			
R 81	0134361	composition	100Ω	K	RC¼GF	D502	0575019	IN60P			
	0114521	carbon, film	10kΩ	K	SRD¼P	D503	0575019	IN60P			
						D504	0575019	IN60P			
TRANSISTORS						for MAIN AMPLIFIER CIRCUIT BOARD					
for MC CIRCUIT BOARD						D701	2327041	V06C			
TR101	2320073	2SC 458LG ⓐ				D702	2327041	V06C			
TR102	2320073	2SC 458LG ⓐ				D703	2327041	V06C			
for EQUALIZER CIRCUIT BOARD						D704	2327041	V06C			
IC201	2327302	FA - 6001T				D801	2327041	V06C			
IC202	2327302	FA - 6001T				D802	2327041	V06C			
for MIC AMPLIFIER CIRCUIT BOARD						D803	2327041	V06C			
TR301	2320073	2SC 458LG ⓐ				D804	2327041	V06C			
TR302	2320073	2SC 458LG ⓐ				for DC POWER SOURCE CIRCUIT BOARD					
TR303	2320073	2SC 458LG ⓐ				D903	0575050	V01G			
TR304	2320073	2SC 458LG ⓐ				D904	0575050	V01G			
for VU METER AMPLIFIER CIRCUIT BOARD						D905	0575050	V01G			
TR501	2320073	2SC 458LG ⓐ				D906	0575050	V01G			
TR502	2320073	2SC 458LG ⓐ				D907	2327073	AW01-24			
for PRE-AMPLIFIER CIRCUIT BOARD						D908	2327073	AW01-24			
TR601	2327122	2SC 458ALG ⓐ				for CHASSIS ASSEMBLY					
TR602	2327122	2SC 458ALG ⓐ				D 1	2327041	V06C			
TR603	2320073	2SC 458LG ⓐ				D 2	2327041	V06C			
TR604	2320073	2SC 458LG ⓐ				D 3	2327041	V06C			
TR605	2320073	2SC 458LG ⓐ				D 4	2327041	V06C			
TR606	2320073	2SC 458LG ⓐ				VARIABLE RESISTORS					
TR607	2320073	2SC 458LG ⓐ				VR 1	0156127	Balance	100kΩ-HB		
TR608	2320073	2SC 458LG ⓐ				VR 2	0156126	Volume	100kΩ-B		
for MAIN AMPLIFIER CIRCUIT BOARD						VR 3	0153232	MIC level	100kΩ-B		
TR701	2320161	2SA 565 ⓑ				VR 4	0151202	VU meter balance	200Ω-B		
TR702	2320242	2SA 537A ⓑ				VR701	0152518	Adjust main amp. center voltage	20kΩ-B		
TR703	2320232	2SC 708A ⓑ				VR702	0152517	Adjust main amp. idle current	200Ω-B		
TR704	2327182	2SC 680 ⓑ				VR801	0152518	Adjust main amp. center voltage	20kΩ-B		
TR705	2327192	2SA 566 ⓑ				VR802	0152517	Adjust main amp. idle current	200Ω-B		

MODEL 1A-1000 SERVICE MANUAL

SYMBOL NO.	STOCK NO.	DESCRIPTION	SYMBOL NO.	STOCK NO.	DESCRIPTION
MISCELLANEOUS					
	2518171	MC circuit board assembly		2680482	T-type mold 5 pin terminal board
	2518222	Equalizer circuit board assembly		2650113	Socket-transistor socket
	2518161	MIC amplifier circuit board assembly		0544404	6 pin terminal board
	2518151	VU meter amplifier circuit board assembly		0544402	2 pin terminal board
	2518291	Pre-amplifier circuit board assembly		0544384	4 pin terminal board
	2518531	Main amplifier circuit board assembly		0541358	Socket - 5pin socket (DIN terminal)
	2518241	DC power source circuit board assembly		4725312	Label (for AC 220V, 50/60 Hz)
	2518331	DIN circuit board assembly		4725571	Label (for AC 1.5A)
	2518181	Sub assembly circuit board assembly		4725561	Label (for AC 1.5A, 250V)
	4784571	Screw-3 x 6 ϕ baird screw (for radiation fin fixing and circuit board weight, etc.)	SW 1	4725551	Label (for cover words)
	4784101	Screw-3 x 8 ϕ baird tapping screw (for chassis parts fixing, etc.)		2577024	VU meter (1.2k Ω , 130mA)
	4562401	Screw-earth screw		2637141	Switch-lever switch (AC power source, speaker change-over)
	4770255	Nut-4 ϕ nut with washer (for transformer fixing)	SW 2	0532183	Switch-slide switch (Input sensitivity MC/MM)
	0043793	Bushing (nylon)	SW 3	2617191	Switch-rotary switch (Function)
	2740241	Cord-AC cord (UL)	SW 4	2637061	Switch-lever switch (Tape monitor)
	2747301	Cord-AC cord with SAA standard 3 pin plug	SW 5	2617232	Switch-rotary switch (Mode)
	2657051	Socket - AC socket	SW 6-8	2637061	Switch-lever switch (Mute, Loudness, Hi-filter)
	2217272	Transformer-power transformer	SW 9-10	2617181	Switch-rotary switch (Tone)
	2727134	Fuse-fuse (AC 250V, 1.5A) SLOW (for 220, 240V set)	SW 11	2637061	Switch-lever switch (Low filter)
	2727012	Fuse-fuse (AC 125V, 3A) SLOW (for 120V set)	SW 12	2627011	Switch-slide switch (Pre-Main connection)
	2720033	Fuse-fuse (DC 100V, 3A) FAST	SW13-14	2637141	Switch-lever switch (AC power source, speaker change-over)
	2727086	Fuse-wired in fuse (AC125V, 4A) SLOW (for 120V set)	SW 15	0153232	Variable resistor (with switch, MIC level)
	2727062	Holder-fuse holder	SW 16	2617071	Switch-rotary switch (VU change-over)
	2677101	Jack-microphone jack	for FINAL ASSEMBLY		
J 1, 2	2687141	4 pin terminal board		3240941	Escutcheon assembly
	2677063	Jack-headphone jack		3914141	Knob-inside knob (function)
	2687151	Pin jack - 6P US pin jack		3914131	Knob-inside knob (volume)
	2670221	Pin jack - 4P US pin jack		4564651	Knob-volume knob assembly
	2687161	Pin jack - 1P US pin jack		4564661	Knob-function knob assembly
PL 1-5	2767115	Lamp-pilot lamp (6.3V, 70mA)		3280702	Switch-lever switch
PL 6-7	2760051	Lamp-pilot lamp (6.3V, 150mA)		4358772	Cover assembly
	2720022	Holder-fuse holder (for pilot lamp socket)		4924021	Side board assembly (left)
	2657121	Plug-voltage change-over connector plug (for 220, 240V set)		4924011	Side board assembly (right)
	2787143	Connector-22 pin circuit board connector		4564272	Screw-M4 baird screw (for side board and cover fixing)
	2787141	Connector-12 pin circuit board connector		4680751	Leg